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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,481	12/30/2004	Timo Viero	60091.00368	2846

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EXAMINER	
MILLER, BRANDON J	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/519,481	VIERO ET AL.	
	Examiner	Art Unit	
	BRANDON J. MILLER	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-18,20-35 and 38-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,20 and 38-64* is/are allowed.

6)☒ Claim(s) *1,2,5-18 and 21-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment/Remarks

Disposition of Claims

I. Claims 1-2, 4-18, 20-35, and 38-64 remain pending in the application.

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

II. Claim 4 recites a method with steps as defined in the specification (pages 3-16) including first determining for different nodes of a circuit arrangement one or more predetermined operations to execute; second determining one or more division criteria for dividing signals or signal components into signal classes; dividing at least one of the signals or signal components according to the one or more division criteria into the signal classes; and executing the predetermined operations in the circuit arrangement nodes according to the signal classes, wherein the circuit arrangement is at least substantially in accordance with a centralized loop such that at least two subtrees are connected to the loop, wherein at least one subtree performs tasks of radio-frequency parts and at least one second subtree performs tasks of baseband parts.

Applicant's independent claim 4 comprises a particular combination of elements, which is neither taught nor suggested by the prior art.

Claims 38-50 are allowable based on their dependence of independent claim 4.

Claim 20 recites an apparatus with elements as defined in the specification (pages 3-16) including nodes arranged to perform at least one operation; a divider configured to divide one or more signals or signal components according to one or more predetermined division criteria into signal classes; and performing circuitry configured to perform predetermined operations according to the signal classes, wherein the apparatus is configured substantially in a centralized loop such that at least two subtrees are connected to the loop, wherein at least one first subtree performs tasks of radio-frequency parts and at least one second subtree performs tasks of baseband parts.

Applicant's independent claim 20 comprises a particular combination of elements, which is neither taught nor suggested by the prior art.

Claims 51-64 are allowable based on their dependence of independent claim 20.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

III. Claim 35 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 35 contains the limitation "a computer program embodied on a computer readable medium, the computer readable medium storing code comprising computer executable instructions". The above limitation was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation first appears in claim 35 of an amendment dated 10/02/2007. However, because the amendment adding this limitation was over two years after the 12/30/2004 filing date of the application and the limitation is not recited or suggested anywhere else in the application as filed, the amendment constitutes new matter.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

IV. Claims 1, 18, and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "wherein the circuit arrangement is at least substantially in accordance with a combined tree structure, wherein at least one tree branch performs transmitter tasks and at least one second branch performs receiver tasks and in which circuit arrangement one or more nodes of different branches is connected in a predetermined manner" in lines 10-13.

First, this limitation does not adequately describe the circuit arrangement because it unclear as to whether the "second branch" is a tree branch of the combined tree structure. The

limitation renders the claim indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Second, it is unclear what is meant by the phrase "and in which circuit arrangement" in line 12. The limitation renders the claim indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites limitations similar to the ones described above in claim 1 and are rejected under 35 U.S.C. 112, second paragraph given the same reasoning as above.

Claim 35 recites limitations similar to the ones described above in claim 1 and are rejected under 35 U.S.C. 112, second paragraph given the same reasoning as above.

The following art rejection is based on the best possible interpretation of the claim language in light of the rejections under 35 U.S.C. 112, first and second paragraphs.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

V. Claim 2 is rejected under 35 U.S.C. 102(e) as being anticipated by Schieder et al. (US 2004/0106417 A1).

Regarding claim 2 Schieder teaches a method comprising: first determining for different circuit arrangement nodes at least one operation to execute (see paragraphs [0031] & [0044]). Schieder teaches selecting a modification level from the circuit arrangement (see paragraph [0034], assignment of transmission rate reads on modification level). Schieder teaches merging the selected modification level nodes and deleting irrelevant nodes and links between the nodes and/or adding links (see paragraph [0034], assignment of transmission capacity for link 1 reads on merging and adding). Schieder teaches second determining one or more division criteria for dividing the signals or signal components into signal classes; and dividing at least one of the signal or signal components according to the one or more division criteria into the signal classes (see paragraph [0026]). Schieder teaches executing the determined operations in the circuit arrangement nodes according to the signal classes (see paragraph [0044]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

VI. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.,* 383 U.S. 1,148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

VII. Claims 1, 5-18, and 21-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schieder et al. (US 2004/0106417 A1) in view of Gallagher (US 6,573,757 B1).

Regarding claim 1 Schieder teaches a method comprising first determining for different nodes of a circuit arrangement one or more predetermined operations to execute (see paragraphs [0031] & [0044]). Schieder teaches second determining one or more division criteria for dividing signals or signal components into signal classes and dividing at least one of the signals or signal components according to the one or more division criteria into the signal classes (see paragraph [0026]). Schieder teaches executing the predetermined operations in the circuit arrangement nodes according to the signal classes (see paragraph [0044]). Schieder does not specifically teach wherein the circuit arrangement is at least substantially in accordance with a combined tree structure, wherein at least one tree branch performs transmitter tasks and at least one second branch performs receiver tasks, and in which circuit arrangement one or more nodes

of different branches is connected in a predetermined manner. Gallagher teaches a circuit arrangement that is at least substantially in accordance with a combined tree structure, wherein at least one tree branch performs output tasks and at least one second branch performs input tasks, and in which circuit arrangement one or more nodes of different branches is connected in a predetermined manner (see col. 3, lines 65-67 and col. 4, lines 1-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include wherein the circuit arrangement is at least substantially in accordance with a combined tree structure, wherein at least one tree branch performs transmitter tasks and at least one second branch performs receiver tasks, and in which circuit arrangement one or more nodes of different branches is connected in a predetermined manner because the connections taught in Gallagher can be used to transmit the voice frames and data in Schieder.

Regarding claim 5 Schieder teaches wherein the signals or the signal components transfer packet-form data and the signal classes are indicated in the packet header (see paragraph [0026]).

Regarding claim 6 Schieder teaches wherein the nodes perform the tasks of the radio-frequency parts or the base band parts (see paragraph [0026]).

Regarding claim 7 Schieder teaches wherein the circuit arrangement enables transfer of feedback information (see paragraph [0042]).

Regarding claim 8 Schieder teaches wherein signals to be modulated in different manners in one or more baseband nodes are divided into different signal classes (see paragraph [0026]).

Regarding claim 9 Schieder teaches wherein the data can be transmitted from the nodes to one node or a plurality of nodes (see abstract and paragraph [0016]).

Regarding claim 10 Schieder teaches wherein the network traffic load is monitored signal-classwise (see paragraph [0036]).

Regarding claim 11 Schieder teaches wherein the signal classes constitute a hierarchic signal class system, which class system comprises one or more levels (see paragraph [0044], data transmitted only during speech inactivity relates to hierarchic class system).

Regarding claim 12 Schieder teaches wherein inter-node links have a maximum capacity, within which the number and type of the transmitted signal classes can be altered (see paragraph [0036]).

Regarding claim 13 Schieder teaches wherein the quality class is taken into account when the signal is clipped (see paragraph [0035]).

Regarding claim 14 Schieder teaches wherein the signal power is measured quality class-wise (see paragraph [0039]).

Regarding claim 15 Schieder teaches wherein the signals having different requirements for modulation accuracy are divided into different signal classes (see paragraph [0026]).

Regarding claim 16 Schieder teaches wherein the signals are divided into different signal classes after of at least one of the following: spatial, temporal or frequency level pre-processing (see paragraphs [0026] & [0029]).

Regarding claim 17 Schieder teaches wherein the signals are divided into different signal classes after interference cancellation pre-processing (see paragraph [0035], not transmitting background noise relates to interference cancellation).

Regarding claim 18 Schieder teaches an apparatus comprising nodes arranged to peform at least one operation (see paragraph [0031] & [0044]). Schieder teaches dividing one or more

signals or signal components according to one or more predetermined division criteria into signal classes ([0026]). Schieder teaches performing predetermined operations according to the signal classes (see paragraph [0044]). Schieder does not specifically teach wherein the apparatus is configured substantially in a combined tree structure, whereby at least one first tree branch performs transmitter tasks and at least one second branch performs receiver tasks, and wherein one or more nodes of different branches are connected in a predetermined manner. Gallagher teaches a combined tree structure, whereby at least one first tree branch performs output tasks and at least one second branch performs input tasks, and wherein one or more nodes of different branches are connected in a predetermined manner (see col. 3, lines 65-67 and col. 4, lines 1-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include wherein the apparatus is configured substantially in a combined tree structure, whereby at least one first tree branch performs transmitter tasks and at least one second branch performs receiver tasks, and wherein one or more nodes of different branches are connected in a predetermined manner because the connections taught in Gallagher can be used to transmit the voice frames and data in Schieder.

Regarding claim 21 Schieder teaches a device as recited in claim 5 and is rejected given the same reasoning as above.

Regarding claim 22 Schieder teaches a device as recited in claim 6 and is rejected given the same reasoning as above.

Regarding claim 23 Schieder teaches a device as recited in claim 7 and is rejected given the same reasoning as above.

Regarding claim 24 Schieder teaches a device as recited in claim 8 and is rejected given the same reasoning as above.

Regarding claim 25 Schieder teaches a device as recited in claim 9 and is rejected given the same reasoning as above.

Regarding claim 26 Schieder teaches a device as recited in claim 10 and is rejected given the same reasoning as above.

Regarding claim 27 Schieder teaches a device as recited in claim 11 and is rejected given the same reasoning as above.

Regarding claim 28 Schieder teaches a device as recited in claim 12 and is rejected given the same reasoning as above.

Regarding claim 29 Schieder teaches a device as recited in claim 13 and is rejected given the same reasoning as above.

Regarding claim 30 Schieder teaches a device as recited in claim 14 and is rejected given the same reasoning as above.

Regarding claim 31 Schieder teaches a control which controls the division into signal classes (see paragraphs [0026] & [0031]).

Regarding claim 32 Schieder teaches a device as recited in claim 15 and is rejected given the same reasoning as above.

Regarding claim 33 Schieder teaches a device as recited in claim 16 and is rejected given the same reasoning as above.

Regarding claim 34 Schieder teaches a device as recited in claim 14 and is rejected given the same reasoning as above.

Regarding claim 35 Schieder teaches first determining for different nodes of a circuit arrangement one or more predetermined operations to execute (see paragraphs [0031] & [0044]). Schieder teaches second determining one or more division criteria for dividing signals or signal components into signal classes and dividing at least one of the signals or signal components according to the one or more division criteria into the signal classes (see paragraph [0026]). Schieder teaches executing the predetermined operations in the circuit arrangement nodes according to the signal classes (see paragraph [0044]). Schieder does not specifically teach a computer program embodied on a computer readable medium, the computer readable medium storing code comprising executable instructions; and wherein the circuit arrangement is at least substantially in accordance with (a) a combined tree structure, wherein at least one tree branch performs transmitter tasks and at least one second branch performs receiver tasks, and in which circuit arrangement one or more nodes of different branches is connected in a predetermined manner; or (b) a centralized loop such that at least two subtrees are connected to the loop, wherein at least one subtree performs tasks of radio-frequency parts and at least one second subtree performs tasks of baseband parts. Gallagher teaches a computer program embodied on a computer readable medium, the computer readable medium storing code comprising executable instructions (see col. 4, lines 40-48). Gallagher teaches a circuit arrangement that is at least substantially in accordance with a combined tree structure, wherein at least one tree branch performs output tasks and at least one second branch performs input tasks, and in which circuit arrangement one or more nodes of different branches is connected in a predetermined manner (see col. 3, lines 65-67 and col. 4, lines 1-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device adapt to include a computer

program embodied on a computer readable medium; and wherein the circuit arrangement is at least substantially in accordance with a combined tree structure, wherein at least one tree branch performs transmitter tasks and at least one second branch performs receiver tasks, and in which circuit arrangement one or more nodes of different branches is connected in a predetermined manner because the connections taught in Gallagher can be used to transmit the voice frames and data in Schieder.

Claim Objections

VIII. Claim 2 is objected to because of the following informalities: Claim 2 recites "Previously Presented" in line 5. This is unclear but appears to be a typographical error.. Appropriate correction is required.

Response to Arguments

IX. Applicant's arguments with respect to claims 1-2, 5-18, and 21-35 have been considered but are moot in view of the new ground(s) of rejection.

X. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANDON J. MILLER whose telephone number is (571)272-7869. The examiner can normally be reached on Mon.-Fri. 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/
Supervisory Patent Examiner, Art Unit 2617

September 8, 2008

/Brandon J Miller/
Examiner, Art Unit 2617